IN THE CLAIMS:

Please amend claims 1-3, 9, and 11 as indicated below.

Please add claim 12 as indicated below.

A listing of the status of all claims 1-12 in the present patent application is provided below.

1 (Currently Amended). A method for determining an optimal transition-limiting code for use in a multi-level signaling system, the method comprising the steps of:

determining a coding gain for each of a plurality of transition-limiting codes in the multi-level signaling system, wherein the coding gain for each of the plurality of transition-limiting codes is based at least in part upon a sampling rate of a pulse response for a channel operating at a predetermined data rate in the multi-level signaling system utilizing the transition-limiting code;

selecting one of the plurality of transition-limiting codes having a largest coding gain for use in the multi-level signaling system; and

encoding signals in an encoder using employing the selected transition-limiting code in the multi-level signaling system to at least reduce a number of full-swing transitions between sequential signals symbols in the multi-level signaling system.

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2 (Currently Amended). The method of claim 1, wherein the plurality of transition-limiting codes reduce or eliminate full-swing transitions between ~~signal levels~~ <u>sequential symbols</u> in the multi-level signaling system.

3 (Currently Amended). The method of claim 2, wherein at least some of the plurality of transition-limiting codes have different degrees of reduction or elimination of full-swing transitions between ~~signal levels~~ <u>sequential symbols</u> in the multi-level signaling system.

4 (Original). The method of claim 3, wherein the step of determining a coding gain for each of a plurality of transition-limiting codes comprises the steps of:

a.) selecting a first transition-limiting code having a first degree of reduction or elimination of full-swing transitions;

b.) determining the coding gain of a data transmission over a channel operating at a predetermined data rate in the multi-level signaling system utilizing the first transition-limiting code based at least in part upon the first degree of reduction or elimination of full-swing transitions; and

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c.) repeating steps a and b utilizing a second transition-limiting code having a second degree of reduction or elimination of full-swing transitions.

5 (Original). The method of claim 3, wherein the step of determining a coding gain for each of a plurality of transition-limiting codes comprises the steps of:

a.) characterizing a first pulse response for a channel operating at a predetermined data rate in the multi-level signaling system utilizing a first transition-limiting code having a first degree of reduction or elimination of full-swing transitions;

b.) determining the coding gain of a data transmission over the channel using the first transition-limiting code based at least in part upon the first degree of reduction or elimination of full-swing transitions; and

c.) repeating steps a and b utilizing a second transition-limiting code having a second degree of reduction or elimination of full-swing transitions.

6 (Original). The method of claim 1, wherein at least some of the plurality of transition-limiting codes have different sampling rates.

7 (Original). The method of claim 6, wherein the step of determining a coding gain for each of a plurality of transition-limiting codes comprises the steps of:

a.) selecting a first transition-limiting code having a first sampling rate;

b.) determining the coding gain of a data transmission over a channel operating at a predetermined data rate in the multi-level signaling system utilizing the first transition-limiting code based at least in part upon the first sampling rate; and

c.) repeating steps a and b utilizing a second transition-limiting code having a second sampling rate.

8 (Original). The method of claim 6, wherein the step of determining a coding gain for each of a plurality of transition-limiting codes comprises the steps of:

a.) characterizing a first pulse response for a channel operating at a predetermined data rate in the multi-level signaling system utilizing a first transition-limiting code having a first sampling rate;

b.) determining the coding gain of a data transmission over the channel using the first transition-limiting code based at least in part upon the first pulse response; and

c.) repeating steps a and b utilizing a second transition-limiting code having a second sampling rate.

9 (Currently Amended). The method of claim 1, wherein the coding gain for each of [a] the plurality of transition-limiting codes comprises:

a first component based upon a sampling rate of a pulse response for a channel operating at a predetermined data rate in the multi-level signaling system utilizing the transition-limiting code; and

a second component is further based at least in part upon a degree of reduction or elimination of full-swing transitions between signal levels symbols in the multi-level signaling system utilizing the transition-limiting code.

10 (Cancelled).

11 (Currently Amended). At least one processor readable storage medium [for] storing a computer program of instructions configured to be readable by at least one processor for instructing the at least one processor to execute a computer process for performing the method as recited in claim 1.

12 (New). An article of manufacture for determining an optimal transition-limiting code for use in a multi-level signaling system, the article of manufacture comprising:

at least one processor readable storage medium; and

instructions stored on the at least one medium;

wherein the instructions are configured to be readable from the at least one medium by at least one processor and thereby cause the at least one processor to operate so as to:

determine a coding gain for each of a plurality of transition-limiting codes in the multi-level signaling system, wherein the coding gain for each of the plurality of transition-limiting codes is based at least in part upon a sampling rate of a pulse response for a channel operating at a predetermined data rate in the multi-level signaling system utilizing the transition-limiting code;

select one of the plurality of transition-limiting codes having a largest coding gain for use in the multi-level signaling system; and

encode signals using the selected transition-limiting code to at least reduce a number of full-swing transitions between sequential symbols in the multi-level signaling system.